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Title

Time to smoke: facilitating smoking breaks in mental health inpatient settings

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Abstract

Introduction: Prevalence of smoking in mental health patients is up to three times higher than in the general population, with the highest rates seen in inpatient settings. In many countries, smoke-free policies in inpatient settings prohibit smoking in buildings but allow supervised smoking breaks. We aimed to estimate staff resources dedicated to such breaks.

Methods: A cross sectional survey **was conducted** with a convenience sample of inpatient mental health staff from four hospitals in London, England. Staff were asked about the number of designated supervised smoking breaks and their duration, per day, on their ward. We calculated the opportunity cost of the time allocated to supervising smoking.

Results: The survey was completed by 67 staff from 25 inpatient wards across four hospital sites. Eighteen wards had designated daily supervised smoking breaks; the average number of breaks per ward was 7.6 (sd 3.9), with an average of 2 hours, 23 minutes a day of clinical time dedicated to supervising smoking. We estimated the opportunity cost of supervising smoking was between £50 to £238 per ward per day or £18,250 to £86,870 per ward per year, depending on the seniority of staff supervising smoking breaks.

Conclusions: Considerable time and resources is being used to facilitate smoking in mental health hospitals with smoke-free policies which allow smoking in hospital grounds. This resource could be redirected to provide evidence-based care that improves health and wellbeing, such as tobacco dependence treatment.

Implications

This study is the first to estimate the time and opportunity costs of facilitating smoking across different wards in a mental health setting in the UK. Health care resources are scarce, including staff time. Every time staff facilitate smoking, clinical time is diverted away from therapeutic activities that contribute to improved patient health. Rather than suggesting any financial savings can be made through the introduction of smoke-free services, we present one metric of the value to mental health service providers of the hours of clinical time that could be released to provide therapeutic care.

Introduction

Smoking during an admission to a mental health hospital has been a longstanding accepted and expected cultural norm (1). Smoking prevalence in mental health patients is up to three times higher than in the general population (2) and higher in mental health inpatient settings compared to community settings (3). Motivation to stop smoking among hospitalised patients with a mental illness is similar to that seen in patients hospitalised for non-mental health conditions (4). Smoking cessation treatments that work for smokers without mental illness also work for those with mental illness (5, 6), yet historically, treatment during an inpatient stay has been neglected. For those with mental illness, in addition to a reduced life expectancy, smokers experience more severe mental health symptoms and require higher doses of psychotropic medication (7). Barriers to providing tobacco dependence treatment for smokers with mental illness include clinicians' ambivalence about their role and responsibilities in providing cessation support (8) and beliefs that smoking is a therapeutic tool and necessary to prevent agitation and aggression in inpatient settings (9).

The implementation of comprehensive smoke-free policies is commonplace in hospital settings in parts of Europe, North America, Australia and New Zealand, though continued smoking is commonly reported (10). Smoke-free legislation was introduced in mental health settings in England and Northern Ireland in 2008, prohibiting smoking in buildings (11). However, smoking in outside designated areas is relied on to comply with the legislation rather than providing smokers with support to quit or manage nicotine withdrawal during a period of temporary abstinence (12). The National Institute of Health

and Clinical Excellence (NICE) guidelines for smoking cessation in secondary care, acute, mental health and maternity settings (13) present mental health organisations in England, Wales and Northern Ireland with the opportunity to create smoke-free hospital environments that are conducive to promoting health and wellbeing as opposed to undermining it. NICE recommends that mental health services implement tobacco dependence treatment pathways, prohibit smoking in hospital grounds as well as buildings and put an end to staff facilitating smoking, such as buying tobacco products and supervising 'smoking breaks' (13). There is anecdotal evidence that mental health inpatient workers spend clinical time facilitating smoking on and off hospital sites (14, 15), though the formal assessment of this is limited. A pilot study of 105 staff in 8 forensic wards (**dedicated to treating mentally disordered offenders**) in London, England estimated that approximately 90 minutes per day **per ward** of clinical time was allocated to facilitating smoking (16).

This study aimed to estimate resources devoted to facilitating smoking in one mental health organisation in London, England. Costs occur when an activity takes place that necessitates the use of scarce resources (in this case staff time) that could be used for some other purpose; economists describe this as an opportunity cost (17).

Methods

We undertook a cross sectional survey with a convenience sample of inpatient mental health staff from four hospitals in a National Health Service (NHS) organisation, providing

mental health care to a population of 1.1 million. At the time of data collection there were 50 wards (table 1), with approximately 800 beds; 4749 patients were admitted in the year we conducted the survey. An indoor smoke-free policy was implemented in 2008, and since then many wards had dedicated 'smoking breaks' where all smokers were escorted to secure ward gardens at the same time for several short supervised periods throughout the day. The forensic services extended the indoor smoke-free policy to their grounds in 2013. We collected data from staff who attended a three day training course (tobacco dependence treatment in mental health settings) in July/August 2014, shortly before the implementation of a comprehensive smoke-free policy (grounds as well as buildings) across the rest of the wards in October 2014. Staff were asked to complete a self-report questionnaire before the training which included questions about practice on their ward, rather than their own personal practice; they were specifically asked about the number and duration of designated supervised smoking breaks per day on their ward, which members of staff were likely to supervise the breaks and how often staff purchased tobacco offsite for patients.

Data from the questionnaire were analysed using SPSS v22. Where several staff from one ward completed the questionnaire, the average amount of time was calculated to avoid double counting (e.g. if five staff from one ward completed a questionnaire, we averaged the reported time for that ward). Descriptive statistics were used to analyse the amount of time spent facilitating smoking. We totalled the amount of time dedicated to supervising smoking breaks by multiplying the number of smoking breaks per ward per day with the

reported length of the breaks; we calculated the average time wards dedicated to supervising smoking by dividing the total time by the number of wards.

The opportunity cost of staff time allocated to this activity was estimated from unit costs provided by the Personal Social Services Research Unit (18). Cost figures are nationally applicable for the UK and include direct costs (e.g. salaries) as well as indirect costs (e.g. capital and overhead costs). In economic analysis, unit costs provide a good approximation of opportunity cost as they reflect the price the NHS is prepared to pay for, and therefore the value it places on the time allocated to the range of clinical activities delivered by staff with varying levels of skills and experience. This method for calculating unit costs is commonly used in cost effectiveness studies of health care interventions (19, 20).

Results

Sixty seven staff, from 25 out of 40 inpatient wards (excluding the 10 forensic wards) in four hospitals completed the questionnaire (Table 1). Eighteen wards had designated supervised smoking breaks in ward gardens between the hours of 7am and 11pm whereas four had ad-hoc arrangements with 24 hour access to smoking in an outdoor space; Children and Adolescent Mental Health Services (CAMHS) staff did not allow or supervise smoking. The average amount of time dedicated to supervising smoking was 2 hours 23 minutes a day per ward (table 1), or 10% of clinical time over a 24 hour period.

Insert Table 1

Respondents indicated that any grade of staff (from least to most qualified) would supervise smoking; however it was more common for the most junior qualified nursing staff or the least qualified support worker to supervise smoking breaks. Respondents also reported that breaks were usually supervised by one member of staff, though it was frequent practice for two members of staff to supervise the breaks for patient safety reasons. Total and mean times dedicated to supervising smoking breaks were therefore used to calculate opportunity costs for either one grade 2 member of staff (i.e. the least qualified) or for one grade 5 member of staff (i.e. the most junior qualified) (Table 1), to be conservative. We estimated that per day, the opportunity cost dedicated to supervising breaks was valued at an average of £50 and £238 per ward, or £18,250 to £86,870 per ward per year depending on the seniority of staff supervising smoking breaks.

Additionally, staff on all included wards with the exception of CAMHS regularly bought tobacco for patients from local shops, ranging from at least once a month for one MHOA ward and 2-3 times a day for all the psychosis wards. Staff time to buy tobacco was not costed because of the difficulty in doing so (i.e. proximity of shops depending on hospital location).

Discussion

Across 18 wards in 4 hospitals, an average of 2.23 hours a day per ward was dedicated to supervising smoking with an opportunity cost to each ward of between £50 to £238.33 per

day, or £18,250 to £86,870 per year, depending on the seniority of staff supervising the smoking break. These calculations do not suggest that any financial savings could be made through the introduction of smoke-free services. However, this is one metric of the value to mental health service providers of the clinical time that could be saved (as expressed by how much the NHS pays staff for the clinical skills they provide) by abolishing smoking breaks. This would release clinical time to provide therapeutic care that promotes health and prolongs life, rather than undermining and shortening it.

There are a number of limitations to the study. Participants were from four hospitals in one mental health organisation, limiting the generalizability of findings to other mental health organisations in different geographical locations with different service configuration. However we know from previous research that smoking breaks are common in mental health settings (12). We relied on self-report of staff although the findings are broadly consistent with observational data from an earlier pilot study of forensic wards (16) and wards participating in the study were broadly representative of the organisation as a whole (e.g. we surveyed staff from 60% of the wards caring for people with psychosis and 66% of wards caring for older adults). Participants were a convenience sample of staff attending training and could therefore represent those most interested in smoking cessation and who may over report the amount of time spent in this undesired activity. However, we collected the data three months prior to the implementation of a **comprehensive** smoke-free policy and staff had been engaged in a quality improvement initiative for the previous six months, therefore some wards had reduced their staff supervised smoking breaks as a result. **At the time this study was conducted, there was only one other mental health organisation in England that had implemented a comprehensive smoke-free policy, though several**

have done so since, in order to meet the recommendations by NICE (13). Staff time purchasing tobacco was excluded from the cost calculations. We also did not measure how much time staff spent on the storage of smoking paraphernalia, escorting patients to smoking areas, dealing with disputes caused by detained patients wanting to go outside to smoke between designated smoking breaks, if breaks were supervised by more than one staff member and other grade of staff. Thus, the findings are likely to be a very conservative estimate and under represent typical practice. Improving the methodology could strengthen these findings, such as triangulating the data collected from self-report questionnaires with direct independent observation and including other NHS organisations.

If the reality of smoke-free hospitals is to be achieved, the belief that smoking is a therapeutic tool and necessary to prevent agitation and aggression in inpatient settings (9) needs challenging. Nicotine has a half-life of approximately 2 hours, resulting in nicotine withdrawal symptoms beginning shortly after a cigarette is finished. If inpatient smokers are not prescribed (or adhere to) nicotine replacement therapy (NRT) between smoking breaks, or during any period of temporary abstinence, they are likely to be in a state of withdrawal and suffer symptoms such as restlessness, irritability and a preoccupation with finding opportunities to smoke. When a smoking break occurs, smoking a cigarette will be perceived to calm the patient, as his or her nicotine blood levels are replenished. This is then easily misinterpreted by staff and patients as evidence that smoking is a therapeutic tool and necessary to prevent agitation (9). Reinvesting resources in therapeutic activities such as managing patients to temporarily abstain from smoking without the discomfort of nicotine withdrawal or encouraging a quit attempt can be achieved by promptly offering

inpatient smokers NRT on admission, increasing the dose for heavily dependent smokers and educating smokers and clinicians on the benefits of NRT compared to smoking tobacco (21, 22).

Achieving total smoke-free mental health services requires more than simply getting rid of supervised smoking breaks. It will require staff training, patient education, and the development and implementation of tobacco dependence treatment pathways. Assessing the use of staff time following the implementation of a comprehensive smoke-free policy will be informative to see if the opportunity to release staff time spent facilitating smoking is reinvested in therapeutic activities such as treating tobacco dependence.

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Declaration of interests

The authors have no conflicting interests

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Table1: Resources dedicated to supervising smoking breaks

Wards		Total	Psychosis	MHOA	Specialist	CAMHS
	Number of wards in the organisation ¹	50	25	6	5	4
	Staff included in study	67	53	4	5	5
	Wards included in the study	25	15	4	3	3
	Wards that did not facilitate smoking	3	0	0	0	3
	Wards allowing ad-hoc smoking	4	0	2	2	0
	Wards with supervised smoking breaks	18	15	2	1	0
Time						
	Number of smoking breaks per day	137	123	9	5	-
	Mean (sd) number of smoking breaks per day, per ward	7.6 (3.9)	8.2 (4.1)	4.5 (0.7)	5	-
	Mean length of smoking breaks: minutes (sd)	19 (6.3)	20 (5.7)	18 (3.5)	5	-
	Total time supervising smoking breaks per day ²	42 hours, 50 mins	39 hours, 45 mins	2 hours, 40 mins	25 mins	-
	Mean time supervising smoking per day per ward ³	2 hours, 23 mins	2 hours, 39 mins	1 hour, 20 mins	25 mins	-
Opportunity cost						
	Total opportunity cost per day (across 18 wards)	£899 ⁴ to £4283 ⁵	£834.75 to £3975	£56 to £267	£8.75 to £42	-
	Mean opportunity cost per day per ward ⁶	£50 to £238	£55.65 to £265	£28 to £167	£8.75 to £42	-

¹Excluding forensic wards²Calculated by multiplying the total no of smoking breaks by length of smoking breaks for individual wards and then totalling across wards³Calculated by dividing the total time by the number of wards⁴ Calculated at £21 an hour of patient contact (grade 2 worker), multiplied by total time supervising smoking (e.g. £21 x 42 hours, 50 mins)⁵ Calculated at £100 an hour of patient contact (grade 5 nurse) multiplied by total time supervising smoking (e.g. £100 x 42 hours, 50 mins)⁶Calculated by dividing total costs by number of wards

Mental Health of Older Adults (MHOA): Children & Adolescent Mental Health Services (CAMHS)